

SW

(Task #1845)

Bond Release Findings

Mine Name: Cricket Mountain
Operator: Greymont Western US Inc.
3950 South 700 East
Suite 301
Salt Lake City, UT 84107

I.D. No.: M/027/006
Mineral Ownership: FEE
Surface Ownership: FEE
Permit Term: 1980

Disturbed Area: 625.7 Acres

Regraded: 51.8

Reseeded: 51.7

Acres Bonded: 625.7

Acres Proposed for Partial Release: 51.8

Acres Released: 51.7

Acres Remaining: 574

Surety

Amount: \$2,098,500

Form: LOC

Amount Proposed for Release: \$286,300

Amount Released: \$286,300

Amount Remaining: \$1,812,200

Setting and Premining Environment

The mine is in the Cricket Mountains south of Delta. Premining land uses are wildlife habitat and grazing.

Soils in the area being mined are limited. Much of the area contains rock outcrops with no salvageable soil, but there are swales from which soil can be gathered.

Vegetation in the area varies from black sage to sage/grass communities. Dominant species include black sage, bluebunch wheatgrass, and cliffrose. Annual grasses are very common in undisturbed areas.

Operations

The operation consists of open pit benched operations to mine chemical grade limestone.

Hole Plugging

All holes are plugged in compliance with the Utah Minerals regulatory program.

Reclamation

The overall vegetative cover for the release areas is 19.7 percent. This exceeds the required cover percentage of 17 percent, which is 70 percent of measured background vegetation. The area proposed for release includes the Poison Mountain West Dump. The south side of the pile has been left at angle of repose, because it blends in with contiguous natural talus slopes of the area. The smaller area for the dump has been reclaimed with great success.

Mine Engineering

The design and reclamation success of the West dump was a cooperative effort including suggestions and guidance from UDOGM staff. It meets release criteria of three years sustained growth at 70% or more of background vegetation. The surface of the West dump was regraded as proposed in the 1992 Cricket Mountain Quarry Amendment. The slope was regraded to 3 to 1 (H:V) or less, topsoil was added to the surface, and the area was seeded. As the plan was conceptual in nature, the southern edge of the West dump was somewhat different than originally planned. The southern portion was left at the angle of repose in order to not disturb additional ground. The configuration of the southern portion was similar to the approved grading for the North dump pile in the 1992 amendment. The slope was left at angle of repose and the steep areas did not have topsoil placed on them as the

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area was too steep for equipment to work. The slopes on the southern edge of the West dump, as now configured, contour into the adjacent natural talus slopes. These slopes were visited and approved as stable by Doug Jensen UDOGM mine engineer during numerous inspections.

Hydrology

Drainages.

All drainage is ephemeral and due to the arid environment does not flow except in very extreme events.

Dams, Impoundments, Trenches, and Pits

No impoundments were left.

Erosion Control.

No erosion exists and the site does not pose any threat to erosion.

Roads:

Roads are not part of this release.

Revegetation

The postmining land uses are wildlife habitat and grazing. These uses have been met by establishment of vegetation cover meeting release standards.

Some portions of the mine have soil that can be collected, but others are mostly rock outcrops with small pockets of soil that are difficult or impossible to salvage. Various types of growth media and soil supplements and treatments have been tried, and these are discussed below.

The operator has collected vegetation data in reference areas for nine years, and the average vegetation cover over this period, excluding cheatgrass and red brome, is 24.4 percent. It does not appear the original plan contains baseline vegetation cover data, so the revegetation standard should be based on the data the operator has collected. Based on this cover value of 24.4 percent, the revegetation success standard is 17.1 percent.

The weighted average cover value for the areas being proposed for release is 20.1 percent which exceeds the success standard. This value excludes annual grasses. The cover values for individual benches and areas of the waste dump vary from 2 to 33 percent, so there is a wide range of values. Most of the cover is provided by cool season grasses, such as crested wheatgrass, bluebunch wheatgrass, Siberian wheatgrass, and others, but shrubs, such as black sage and fourwing saltbush, and forbs, especially firecracker penstemon, are also present.

Over about the last eleven years, the operator has tried several revegetation methods and soil treatments with mixed success. The treatments include the use of limestone fines, topsoil, rocks, chemical fertilizer, composted manure, hay and straw mulches, and surface roughening. In general, areas with the greatest amount of cover from desirable species are those where:

1. Topsoil was applied, even if it was only a thin layer.
2. The surface was left rough.

3. Rocks were placed on the surface or where rocks were part of the growth medium.
4. There was a shorter period of time between soil application and seeding.

Other treatments appeared to have some effects, but it is difficult to draw definitive conclusions. It appeared that cover from perennial species was increased on benches where composted manure was applied, but these areas also had more cheatgrass. Chemical fertilizer appeared to have little effect either on perennial or annual species.

Surprisingly, seeding in the spring did not seem to adversely affect results. On the waste dump, the upper, middle, and lower areas were all seeded on March 5, 2003, but the lower area had much less cover than the upper and middle areas. The only difference between these areas was that soil was applied on the lower area about a year before it was applied to the upper and middle areas. This may have allowed weeds to become established which subsequently competed with perennial species.

Recommendation

These sites should be released as they meet the requirements of vegetation release standards.



Permit Lead

10/9/07
Date